

WHAT IS CLAIMED IS:

1. A vehicular control system that conducts feedforward control so that a controlled value of a controlled system disposed in a vehicle is made to follow a target value, the vehicular control system comprising:

gain calculating means for adaptively determining a gain based on a value obtained by multiplying a derivative value of the target value by the error between the target value and the actual controlled value; and

feedforward corrected value calculating means for determining, as a feedforward corrected value, a value obtained by multiplying the gain by the derivative value of the target value.

2. The vehicular control system of claim 1, wherein the gain calculating means uses the target value at a point in time going back in the past by an amount of dead time when determining the error between the target value and the actual controlled value.

3. The vehicular control system of claim 1, wherein the controlled system is an air-fuel ratio control system, the gain calculating means adaptively determines the gain based on a value obtained by multiplying the derivative value of a target fuel amount by the error between a target excess fuel ratio and an actual excess fuel ratio, and

the feedforward corrected value calculating means determines, as the feedforward corrected value, a value obtained by multiplying the gain by the derivative value of the target fuel amount.

4. A vehicular control system that conducts feedforward control so that a controlled value of a controlled system disposed in a vehicle is made to follow a target value, the vehicular control system comprising:

gain calculating means for adaptively determining a gain based on a value obtained by multiplying a derivative value of the target value by the sum of the error between the target value and the actual controlled value and an integral value of that error; and

feedforward corrected value calculating means for determining, as a feedforward corrected value, a value obtained by multiplying the gain by a difference value between the target value and a value of a first-order lag of the target value.

5. The vehicular control system of claim 4, wherein when the feedforward corrected value calculating means calculates the value of the first-order lag of the target value, the feedforward calculating means adaptively determines a first-order lag time constant thereof on the basis of a value obtained by multiplying the target value by the sum of the error between the target value and the actual controlled value and the integral value of that error.

6. The vehicular control system of claim 4, wherein the gain calculating means uses the target value at a point in time going back in the past by an amount of dead time when determining the error between the target value and the actual controlled value.

7. The vehicular control system of claims 4, wherein the

feedforward corrected value calculating means includes means for removing the effects of steady-state deviation between the target value and the actual controlled value.

8. The vehicular control system of claims 7, wherein the means for removing the effects of steady-state deviation removes the effects of steady-state deviation by multiplying a previous feedforward corrected value in a process that calculates the first-order time constant.

9. The vehicular control system of claims 4, wherein the controlled system is an air-fuel ratio control system, the gain calculating means adaptively determines the gain based on a value obtained by multiplying the derivative value of a target fuel amount by the sum of the error between a target excess fuel ratio and an actual excess fuel ratio and the integral value of that error, and

the feedforward corrected value calculating means determines, as the feedforward corrected value, a value obtained by multiplying the gain by the integral value between the target fuel amount and a value of the first-order lag of the target fuel amount.

10. A vehicular control system that conducts feedforward control so that a controlled value of a controlled system disposed in a vehicle is made to follow a target value, the vehicular control system comprising:

gain calculating means for adaptively determining a gain based

on a value obtained by multiplying a derivative value of the target value by the error between the target value and the actual controlled value;

first-order lag time constant calculating means for adaptively determining a first-order lag time constant of the target value on the basis of a value obtained by multiplying a previous feedforward corrected value by the error between the target value and the actual controlled value; and

feedforward corrected value calculating means for determining, as a feedforward corrected value, a value obtained by multiplying the gain by a difference value between the target value and the value of the first-order lag of the target value calculated using the first-order lag time constant.